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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,285	01/02/2002	Alfred Bubik	P21775	7957

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EXAMINER	
HUG, ERIC J	

ART UNIT	PAPER NUMBER
1731	

DATE MAILED: 11/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/019,285	BUBIK ET AL.	
	Examiner	Art Unit	
	Eric Hug	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 August 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *28-55 and 57-84* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *55,57,58,70-82 and 84* is/are allowed.

6)☒ Claim(s) *28-54,61-69 and 83* is/are rejected.

7)☒ Claim(s) *59 and 60* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☒ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

The following is in response to the amendment filed on August 7, 2003.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 28-54, 61-69, and 83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Halmschlager (EP 0 933 473) in view of Bubik et al (US 4,417,950), Kankaanpaa (US 4,406,739), and Armstrong et al (US 4,425,187). Patent family member US 6,267,846 provided by the Applicant was used as the English translation equivalent for EP 0 933 473. The substance of this rejection was presented in the previous office action and is repeated below. NOTE: Claim 83 was inadvertently absent from the claims listed under this rejection as presented in the previous office action, however claim 83 was addressed in the text of the rejection. The inclusion of this claim above does not constitute a new grounds of rejection.

Halmschlager discloses a twin-wire former for a fibrous web comprising two endless wire belts (11, 12) defining two closed loop sections, a rotating dewatering element (30) within the first section (the section defined by wire 11) whereby the two wires are arranged to form an inlet gap (28) and arranged to run together over a portion of the rotating dewatering element, an obliquely arranged flowbox (26) at the gap inlet (relative to the horizontal), a forming fibrous web located between the two wires, a

second dewatering element (36) within the second section (defined by wire 12), an oblique downward run (relative to vertical) of the two wires over the second dewatering element, a first deflection device (42) whereby the two wires run under the lower vertex, a region after the first deflection device where the two wires separate, a web separating device (15, 37) in the vicinity of where the two wires separate so that the web follows the lower wire, and a second deflection device (33) where the lower wire runs over the upper vertex and then in a downward direction. After separation of the wires, the upper wire travels in an upward direction and then back towards the inlet gap. The difference between the twin-wire former of Halmschlager and that of the present invention is that in Halmschlager the two wires are arranged horizontally between two deflection rolls rather than being arranged to run at an upward angle, with the upper vertex of the second deflection roll being located higher than the lower vertex of the first deflection roll. In Halmschlager, the upper vertex of the second deflection roll is at about the same level as the lower vertex of the first deflection roll.

Bubik discloses a twin-wire machine having many of features of the machine of Halmschlager. Particularly in Figure 5, the twin-wire machine has two endless wires that form a gap, a stock inlet (10), a dewatering device (5) within one wire loop, a second dewatering device (22) within the other wire loop, an oblique run of the two wires over the second dewatering device, deflection devices (13, 14), and a separating device (30'). Unlike Halmschlager, after the first deflection roll, the two wires are directed at an upward angle rather than horizontally. After the two wires separate, the upper wire travels upwards and back to the gap inlet. The bottom wire and web travel over the second deflection device and then downward to a web transfer point. The upper vertex of

the second deflection device is well above the lower vertex of the first deflection device. One advantage of having an upwardly takeoff of the two wires from the first deflection device (arising from the relative positions of the two deflection devices) is that there is an increased wrap-around angle at both deflection devices. Large wrap around angles are favorable for increased dewatering action at the first deflection device due to centrifugal action. Having a large wrap-around angle at the second deflection device ensures good web adhesion to the lower wire.

Kankaanpaa and Armstrong et al are provided as additional evidence of the desirability of having the wires ascend from a first deflection device. In Figure 2 of Kankaanpaa, the first deflection device (guide roll 23) is positioned so that its center is at the same level as the center of the second deflection device (suction roll 24), thus providing the ascending run. The vertical positions of rolls 23 and 24 can be adjusted as necessary to influence the length of the wires about them and correspondingly adjust the time for dewatering (see column 6, lines 1-30). In Figure 3 of Armstrong, the wires are guided about deflection roll 37 at a large wrap angle. A suction box 21 is disposed between deflection rolls to ensure the web follows the lower wire (see column 6, lines 33-47).

Therefore, regarding claims 28 and 83, at the time of the invention, it would have been obvious to one skilled in the art to position the deflection rolls of Halmschlager in a manner whereby the lower vertex of the first deflection device is lower than the upper vertex of the second deflection device, so that the two wires are directed upwardly from the first deflection roll, thereby resulting in increased dewatering from the large wrap angle about the first deflection device.

The following dependent claims are unpatentable, because they include features taught or suggested by the above references or disclosed by Applicant as known prior art features, or because they claim adjustable parameters known by one skilled in the art to be optimized on a twin-wire paper machine. For the latter, the courts have determined that the discovery of an optimum value of a known result effective variable without producing any new or unexpected results is within the skill of the routineer in the art, *In re Boesch*, 205 USPQ 215 (CCPA 1980):

Claims 29-31, 62, 63: The relative locations of upper and lower vertices are suggested by Kankaanpaa, thus are considered optimizable variables.

Claim 32-33, 52-54: The angle of downward run after second deflection device is clearly shown by all the references.

Claim 34: The machines described in the above references are all paper machines.

Claims 35, 64: The first dewatering device in Halmschlager (30) is a rotating forming roll.

Claims 36-38, 42: Diameters of forming rolls and the structure of forming rolls are well known as disclosed by Applicant. Halmschlager teaches the honeycomb structure.

Claims 39-40: The dewatering capacity of forming roll is an optimizable variable.

Claims 41, 43: The forming roll of Halmschlager is an open suction roll.

Claim 44: The second dewatering device of Halmschlager (36) has a plurality of drainage strips.

Claim 45: The angle of the oblique downward run of the two wires is clearly within the claimed range.

Claims 46-51, 61: These type of dewatering and suction elements are known in the prior art as disclosed by Applicant.

Claims 65: Halmschlager (and others) discloses the claimed separating device.

Claim 66, 67: Bubik shows that the first deflection roll is larger in diameter than the second deflection roll, and that the second deflection roll is a suction roll.

Claims 68, 69: The overall height of the former is a result of the location of the two deflection devices, thus are considered optimizable variables.

Allowable Subject Matter

Claims 55, 57, 58, 70-82, and 84 are allowed.

Claims 59 and 60 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claims 70-82 and 84 are allowed for reasons given in the previous office action.

Claims 55, 57, 58 are allowed primarily for additionally providing a horizontal run direction after the second deflecting device.

Claims 59 and 60 are allowable primarily for additionally providing a forming device after the second deflecting device.

Response to Arguments

Applicant's arguments filed August 7, 2003 with respect to the rejection above have been fully considered but they are not persuasive.

Applicant argues that Halmschlager fails to teach or suggest a second deflection device located after the separating device that is arranged to deflect the second endless wire carrying the forming web, but instead discloses a suction roll to remove the web from the wire. In Figure 1 of Halmschlager, suction roll 33 follows separating device 37'. The wire is deflected about the upper vertex of the suction roll and from the horizontal to the downward direction. The web is carried by this wire to web removal roller 8. Suction roll 33 of Halmschlager is equivalently the second deflection device of the present invention. In fact, in the specification of the present invention, Figure 1 and page 10, lines 19-20, it is disclosed that the second deflection device is a suction roll. Therefore, Halmschlager discloses a second deflection located after the separating device.

The only thing lacking in Halmschlager is the upward run angle of the twin wires between the first and second deflection devices. In Halmschlager the twin wires run horizontally. Bubik has been applied to show the desirability of having the claimed upward run. Applicant argues that Bubik fails to provide any teaching or suggestion of any benefits for doing so. However, as described above, Bubik discloses that one advantage of having an upwardly takeoff of the two wires from the first deflection device is an increased wrap-around angle around both deflection devices. A large wrap around angle at the first deflection device is favorable for increased dewatering action. Having a large wrap-around angle at the second deflection device ensures good web adhesion to the lower wire. Thus, there is sufficient teaching in the prior art that an upward run of

two wires between two deflection devices is a desirable feature. The other references, Kankaanpaa and Armstrong et al, are cited to exemplify the desirability of having the wires ascend from a first deflection device. Although Bubik, Kankaanpaa, and Armstrong disclose twin wire formers having overall different configurations from that of the present invention, nevertheless each reference discloses a twin wire former having an upward run between two deflecting devices.

Applicant's amendments to the claims have overcome the objection to claim 56 under 37 CFR 1.75(c) and the rejection of claims 55-60 under 35 U.S.C 112, second paragraph, set forth previously. The objection and the rejection under 35 U.S.C 112 second paragraph have been withdrawn.

Priority

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Germany on May 2, 2000. It is noted, however, that applicant has not filed a certified copy of the 100 21 320.0 application as required by 35 U.S.C. 119(b).

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Hug whose telephone number is 703 308-1980. The examiner can normally be reached on Monday through Friday, 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 703 308-1164. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0651.

STEVEN P. GRIFFIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

jeh